



### Society News

#### From the Chairman

A happy New Year and a merry perihelion to everyone. Judging by the cloudy weather, I suspect there were a few telescopes and other astronomical goodies acquired over the Christmas period. I hope that some good viewing has been had, although some of the armchair astronomy books I have seen make the miserable weather more bearable. 2008 is looking interesting astronomically, with a total eclipse of the Moon and a partial solar eclipse visible from the island, or if you are willing to travel overseas (*further even than Portsmouth*), you could even see a total solar eclipse.

Planning for the Star Party is now well underway (*see page 2*). Although this is not a Public Outreach event like many of our other Star Parties have been, it should provide the opportunity to gather with serious amateur astronomers from the island and beyond and show and discuss equipment and techniques. I have heard that a 15 inch Dobsonian may be brought across from the mainland, so maybe we will have to show off with the Society's 18 inch Dob from the observatory. Will anyone attempt to see, in one night, the 108 Messier objects that should be visible?

Clear Skies

*Lucy Rogers - Chairman*

**VAS Website:** [www.vectis-astro.org.uk](http://www.vectis-astro.org.uk)

Submissions to New Zenith are always welcome and should be sent to:

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Material for the next issue by the 6th of the month please.

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### My First Astronomical Year

I joined the Society in November 2006 and became secretary in September last year but that doesn't mean I know that much about astronomy yet!! It seemed a daunting science to grapple with, so I started by studying a couple of OU short courses (S194 Introducing Astronomy and S196 Planets: an introduction). I have to say that the approach was far too academic and other than provoking interesting discussions at the Observatory I've learnt far more from Peter Burgess' excellent talks each month - thanks Peter. I also thoroughly enjoyed the Sputnik event. Putting together a Sputnik quiz for the children, introduced me to rocket science - I'm now looking forward to reading Lucy's book on the subject as soon as it's published.

I've received some good advice during observatory evenings and once my eyes are back on track (I won't go into that one now) then I'm hoping to get down to some serious work with my binoculars. Of course, getting used to the cold winter nights is never easy as I'm sure you more experienced astronomers know - I'm still a bit of a weed in that department.

Having been to many of the monthly meetings I now realise that there are lots of different aspects to astronomy and that this year I need to pick just one to focus on. After all, I can't keep staring at the night sky and just marvel.

*Sue Curd - Secretary*

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**VAS 2008 - Meeting Programme\***

Feb 22nd	Black Holes in Clusters of Galaxies <i>Robert Dunn – Soton Uni</i>
Mar 28th	Observatories - <i>Mike Maunder</i>
Apr 25th	History of the English Mounting <i>Peter Hingley</i>
May 23rd	The Outer Solar System <i>Mike Leggett</i>
Jun 27th	Colours in the Sky, Oddball Theories <i>Members Night</i>
Jul 25th	Subject TBA <i>Greg Smye-Rumsby</i>
Aug 22nd	Beyond the Eyepiece <i>Peter Burgess</i>
Sep 26th	Historic Telescopes of Cambridge University - <i>Mark Hurn</i>
Oct 24th	Astrophotography - <i>Philip Perkins</i>
Nov 28th	TBA

\* Correct at time of publication

**Sky at Night Magazine**

The BBC magazine needs pictures of astronomers and equipment for the Reader's Scopes section. Send in photographs and ~ 80 words talking about your kit and what you like to observe - include your full name and location. Email: [skyatnight@bbcmagazinesbristol.com](mailto:skyatnight@bbcmagazinesbristol.com) or post to 'Readers' Scopes', BBC Sky at Night magazine, 14th floor Tower House, Fairfax Street, Bristol BS1 3BN. (Images at least 4x4cm at 250 dpi, but the higher the resolution the better.)

Free classified adverts - If you have 'scopes, binoculars or accessories, to sell or swap, to a max. total selling price of £1,000, fill the form on the Classifieds page of the magazine, or at [www.skyatnightmagazine.com](http://www.skyatnightmagazine.com).

**Garlic Festival**

Some rather late news from The Garlic Festival back in August 2007; about a dozen members helped marshal the event and were rewarded with a £500 donation to Society funds. *Many thanks to all who helped.*

**Christmas Quiz Result**

The NZ Puzzle was won by Member Jerry Green who submitted 'TH' as the answer and receives a bottle of white wine as his prize. The original question was to find the next two letters in the sequence STNDRD??.

Quite a few attempts were submitted suggesting that the sequence of letters was from the word STANDARDISED, where the vowels had been removed thus giving 'SD' as the answer - an alternative was 'ZD'

using the American spelling. A more cunning approach was made by Sheila Burgess who came up with "The missing letters could be G and H. The word is dreadnaughts with the vowels removed. (Star Wars vehicles)." Obviously an avid fan of the Dark Side Anagrams there!

The correct way of finding the solution was to space out the sequence into sets of two letters, thus:

ST ND RD ??

By insertion of the numbers 1, 2, 3 and 4 in the appropriate spaces before each group, one arrives at 1ST 2ND 3RD 4??, so it becomes obvious that the missing letters are TH.

*John Langley*

**Star Party News**

Isle of Wight Star Party, in association with SAGAS 6-10th March 2008. Come and enjoy some of the darkest skies in Southern England. The setting is Brighstone Holiday Centre, which has breathtaking, almost 180 degree, Southerly views across the Channel. The centre has chalets and also accommodates tents and caravans.

This event is a serious astronomer's observing session, and not a Public Outreach Event. We are already aware that some astronomers from the mainland will be bringing serious equipment across with them, and most will be willing to demonstrate/talk about their kit. If the conditions are clear, you may even be able to see 108 of the 110 Messier Objects.

Torches, laser pens and flash photographs will be banned as will car headlights, so please use extreme care when arriving and leaving the site.

The provisional program includes trade stands, an astrojumble, a raffle, speakers and a visit to The Needles New Battery (Ex-Rocket testing site).

**Costs**

- Small tent with one person £8 per night.
- Large tent with up to two people £16 per night.
- Caravan with up to two people £16 per night.
- 2/3/4 bed Chalet £18 per person per night.
- Day Rate: £3 per person per day (or night!)

Day tickets will be available from Stephen J Griffiths any Thursday evening at the observatory, or at the Friday meetings in Newport, or contact him by email. Visit [www.iowstarparty.org](http://www.iowstarparty.org) for more details, or contact Stephen J Griffiths on [info@iowstarparty.org](mailto:info@iowstarparty.org).

*Stephen Griffiths*

## This Month's Night Sky

### Moon Phases

New	1st Qtr	Full	Last Qtr
7th	14th	21st	29th

In the early hours of the morning of the 21st a total eclipse of the Moon is visible from the whole of the UK. Clear skies permitting, the Moon enters the Earth's penumbra at 00:35 with the partial phase starting at 01:43. The eclipse becomes total at 03:00 and totality lasts until 03:52. Partiality ends at 05:09 and complete eclipse ends with the Moon exiting the Earth's penumbra at 06:17. Throughout totality the Moon's south polar regions lie close to the edge of the umbral shadow and will therefore appear brighter than the rest of the shadowed disk. Saturn lies above and to the left whilst Leo's primary star Regulus above and to the right.

### The Planets

There is a very poor morning apparition of **MERCURY** - poor because at maximum on the 20th the planet only attains an altitude of just over 2° at the time of civil twilight. The next morning apparition, in July, is also a poor one and the only chance of seeing Mercury in the morning sky this year will be in October/November.

**VENUS** has dropped dramatically towards the south east horizon over the last few weeks but is still bright enough to be visible almost up to the time of sunrise. Sporting an 89% sunlit phase over 11 arcseconds across it appears small when compared to its peak in Oct. last year when it was 27 arcseconds across with a phase of around 45%.

**MARS** is retreating from us quite quickly and this is displayed as a noticeable diminishing of the planet's brightness. At the start of the year Mars appeared at magnitude minus 1.5 but by the end of February this will only be plus 0.2 - quite a quick fade. On the 2nd Mars lies between the horns of Taurus - the stars beta and gamma Tauri.

**JUPITER** is starting to become more favourable now. Rising at around 05:45 mid-month in the constellation of Sagittarius it meets up with the Moon on the 4th at 04h when the Moon passes a wide 5° to the south of Jupiter. Early morning observers with binoculars can take a while to identify the background stars of a constellation which is sadly rarely seen in its full beauty from the UK due to dust-laden skies lit up by badly designed and fitted lighting.

**SATURN** is at opposition on the 24th and is therefore perfectly placed for observers. A telescope will reveal the sharply defined rings and may even show some markings on the disk itself; evidence of activity in the cloud layers. Saturn's brightest satellite Titan is often on show and if conditions are right some of the fainter satellites may also be visible.

**URANUS & NEPTUNE** are not observable, both being at or near solar conjunction.

### Meteors

The only active shower worth looking out for this month is that of the alpha Aurigids stream which reaches a very favourable broad maximum between the 6th and the 9th (the Moon is New on the 7th). With an expected peak rate of only 10 per hour this isn't a spectacular shower by any means, but it is a reliable one.

### Occultations

22nd 04:18 Disappearance of 58 Leonis. mag 4.8  
22nd 04:23 Reappearance of 58 Leonis.

22nd 20:53 Disappearance of upsilon Leonis. mag 4.3  
22nd 21:24 Reappearance of upsilon Leonis.

Both these Occultations, taking place close to full moon, may be challenging to observe.

### Deep Sky Objects

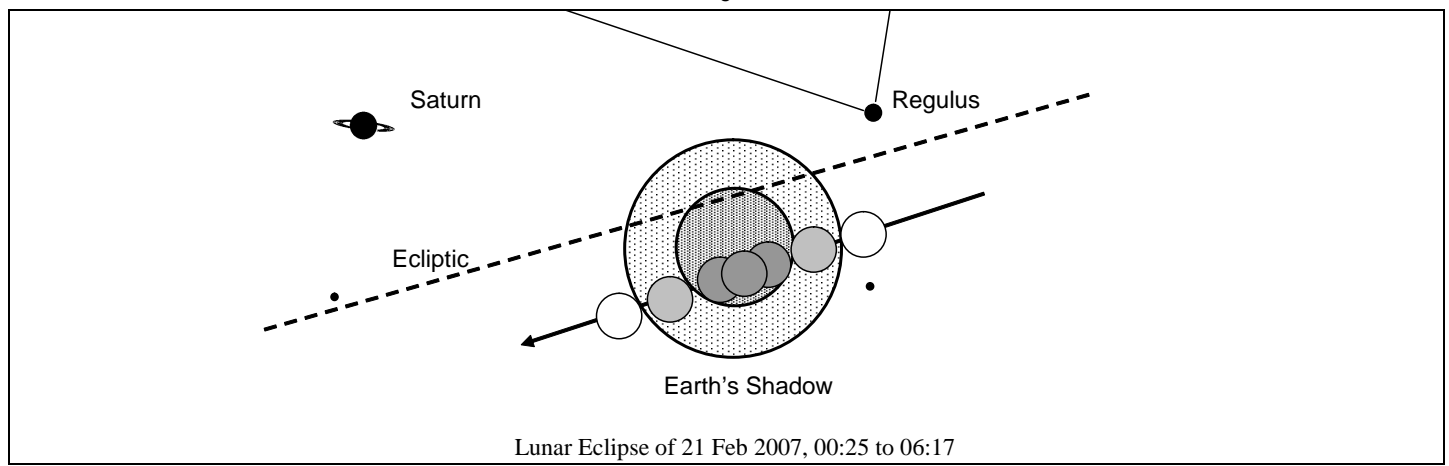
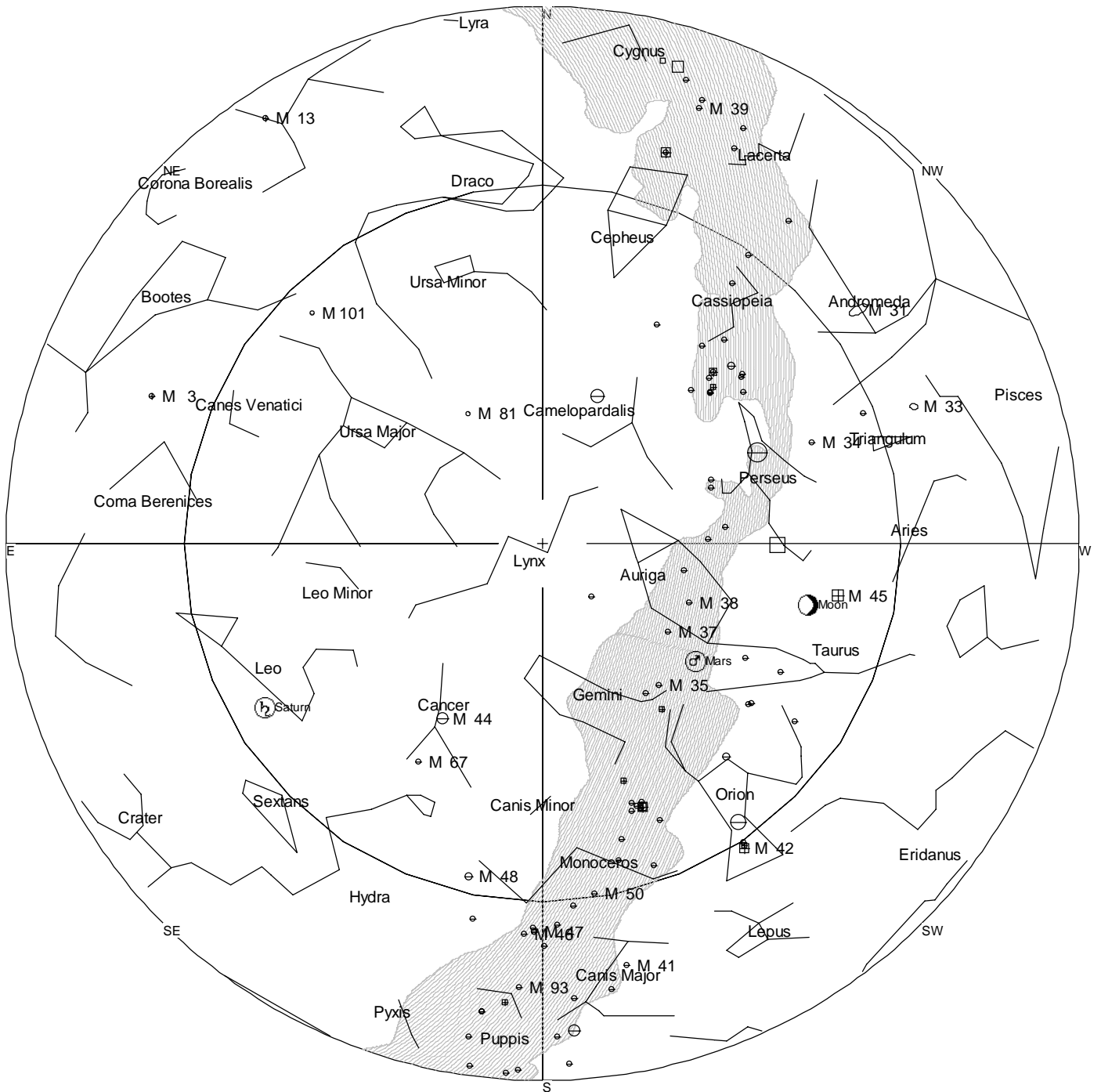
**M44 The Beehive Cluster.** R.A. 8h 41m Dec 19°44' Mag 4.0. This cluster which has been known since ancient times is easily visible to the naked eye as a faint round patch of nebulosity in the centre of the constellation of Cancer. In view of its large size, more than twice the diameter of the full moon, it is best viewed with binoculars, or to show more bees swarming around the hive a low power telescope. Being located in an area of sky with a low star density this cluster stands out readily against the background sky.

**M67 The King Cobra Cluster** R.A. 8h 52m Dec 11°50' mag 7.5. About a fist width south of M44 is M67, a much smaller and fainter cluster that although visible in binoculars is best viewed through a small telescope. The brighter members trace out two loops of stars that are reminiscent of the markings on the hood of an angry cobra. You won't get bitten; fortunately this snake is at a very safe viewing distance; about 2700 light years.

**NGC2903** R.A. 9h 32m Dec 21° 28' mag 9.6. When comet hunting Charles Messier did not find all the fuzzy objects that could be mistaken for these elusive visitors to our skies. There are many relatively bright galaxies that he could have put into his catalogue if his telescope had happened on them. NGC2903 is one of these; commonly regarded as one of the best NGC objects for small telescopes it is a large almost face on barred spiral galaxy. This is a young galaxy with a much higher rate of star formation than our own Milky Way. In larger telescopes this activity can be glimpsed in the spiral arms which have a mottled appearance when viewed with averted vision.

*Peter Burgess*

# February Night Sky Chart



## Astronomy News



### **Bill Gates gives \$10m to probe the universe Large Synoptic Survey Telescope donation**

Bill Gates has donated \$10m to the Large Synoptic Survey Telescope (LSST) - an 8.4 metre beast boasting the world's largest digital camera designed to capture the entire available night sky every three days, "opening a movie-like window on objects that change or move on rapid timescales".

The gift compliments another \$20m from the Charles Simonyi Fund for Arts and Sciences, all of which should see the telescope functional atop Cerro Pachón in northern Chile by 2014.

Donald Sweeney, LSST project manager, said: "The LSST will be the world's most powerful survey telescope. This major gift keeps the project on schedule by enabling the early fabrication of LSST's large optics and other long-lead components of the LSST system."

LSST director J Anthony Tyson, of the University of California, Davis, chipped in with: "This support from Charles Simonyi and Bill Gates will lead to a transformation in the way we study the Universe. By mapping the visible sky deeply and rapidly, the LSST will let everyone experience a novel view of our Universe and permit exciting new questions in a variety of areas of astronomy and fundamental physics."

The LSST team is hoping to capture "exploding supernovae, potentially hazardous near-Earth asteroids, and distant Kuiper Belt Objects", as well as using its observations to "trace billions of remote galaxies and measure the distortions in their shapes produced by lumps of Dark Matter, providing multiple tests of the mysterious Dark Energy".

Once operational, the LSST's three large mirrors plus three refractive lenses in a 3200 Megapixel camera will offer a 10 square degree field-of-view with "excellent image quality", according to the blurb.

It continues: "Over 10 years of operations, about 2,000 deep exposures will be acquired for every part of the sky over 20,000 square degrees. This colour 'movie' of the Universe will open an entirely new window: the time domain."

Those of you who like your data big will be pleased to learn that LSST will generate "30 Terabytes of data per night, yielding a total database of 150 Petabytes".

Agreeably, all of the collected data will be made available to "the community at large with no proprietary restrictions". Bill Gates described the project as "a shared resource for all humanity - the ultimate network peripheral device to explore the universe", further enthusing: "LSST is just as imaginative in its technology and approach as it is with its science mission. LSST is truly an internet telescope, which will put terabytes of data each night into the hands of anyone that wants to explore it. Astronomical research with LSST becomes a software issue - writing code and database queries to mine the night sky and recover its secrets."

There's still a way to go before you can get your hands on the secrets of the universe, however. The latest cash injection will specifically allow work to proceed on constructing the LSST's three large mirrors, as Sweeney suggested. Work on two of these has just begun at the Mirror Laboratory at the University of Arizona in Tucson - a labour of five years.

*Reprinted with permission of the Author - Lester Haines*

### **News From Around the Web**

#### **Astronomers Find Double Einstein Ring**

[www.skyandtelescope.com/news/13682267.html](http://www.skyandtelescope.com/news/13682267.html)

#### **New Information on Galaxies**

[www.astronomy.com/asy/default.aspx?c=a&id=6483](http://www.astronomy.com/asy/default.aspx?c=a&id=6483)

#### **Planets found forming in Pleiades star cluster**

[spaceflightnow.com/news/n0711/15pleiades/](http://spaceflightnow.com/news/n0711/15pleiades/)

#### **Winged Messenger Buzzes Mercury**

[news.skymania.com/2008/01/winged-messenger-buzzes-mercury.html](http://news.skymania.com/2008/01/winged-messenger-buzzes-mercury.html)

#### **White Dwarf Pulses Like a Pulsar**

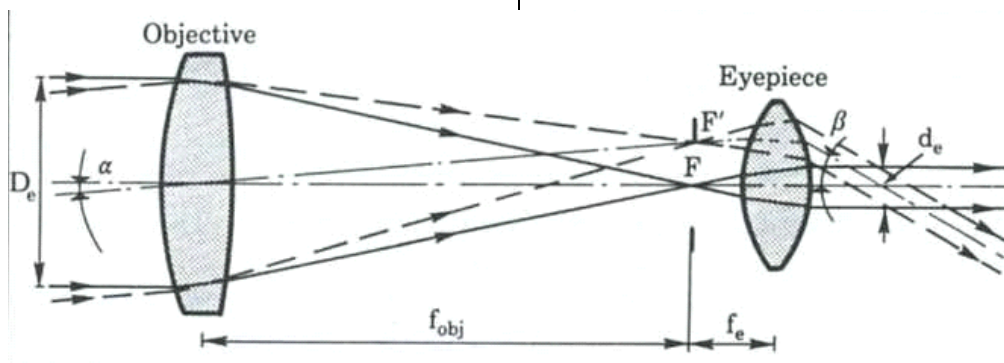
[www.physlink.com/News/080103DwarfPulsar.cfm](http://www.physlink.com/News/080103DwarfPulsar.cfm)

#### **Disks Around Black Holes and Binary Stars Just Got Bigger**

[http://www.redorbit.com/news/space/1210342/disks\\_around\\_black\\_holes\\_and\\_binary\\_stars\\_just\\_got\\_bigger/index.html](http://www.redorbit.com/news/space/1210342/disks_around_black_holes_and_binary_stars_just_got_bigger/index.html)

# Eyepieces

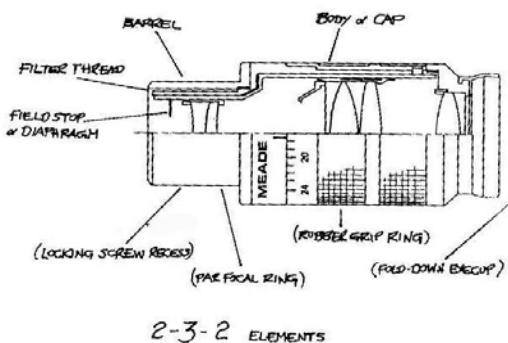
*From the last monthly meeting*



A telescope can be characterised by its aperture and its magnification. A large aperture will gather more light so that fainter, more distant objects can be seen while the magnification allows the observer to see more detail. A large aperture is therefore more important for deep space objects whereas higher magnification is useful for planets to see surface features.

Magnification is determined by the ratio of the focal length of the telescope objective (primary mirror or lens) to the focal length of the eyepiece. Since this also magnifies the speed with which objects cross the field of view there is a practical limit to the amount of magnification used. With too much magnification objects will cross the field of view rapidly requiring constant adjustment of the telescope alignment.

The eyepiece of a telescope determines the overall magnification so a range of interchangeable eyepieces provides the observer with a variety of options. For a specific observation the appropriate eyepiece is chosen to achieve the best results.



The simplest eyepiece consists of a single lens to focus the light from the objective onto the eye. Modern eyepieces consist of multiple elements to overcome distortions. This includes corrections for aberration such

as spherical aberration so that all parts of the spectrum are focused together. Each element is itself a multiple lens.

The surfaces of the elements will be coated with non-reflective material to reduce the losses as light passes through the eyepiece. At each glass to air interface a fraction of the light will be reflected rather than transmitted though the lens. For a single lens 8% of the incident light can be lost while for a wide angle compound lens this could be as high as 40%. Using non-reflective coatings can reduce these figures to below 1% and 3% respectively.

Colour filters can be used to counter glare and accentuate features. A light blue filter will reduce glare from the moon, improve the view of Venus against the twilight, accentuate the polar caps on Mars and highlight the belts on Jupiter. Deep blue accentuates Martian dust storms and a green filter enhances the contrast of some lunar features and accentuates melt lines around the polar caps on Mars and Jupiter's red spot. Other effects can be achieved with yellow, orange and red filters that will help accentuate specific features.

Another type of filter is the light pollution filter. This can be a broad or narrow band filter that removes glare from sodium street lighting for instance. A general recommendation for an observer is to have a range of eyepieces from low to medium power (magnification) so that an appropriate eyepiece can be selected for the object under observation.

In conclusion, "A good eyepiece, like a diamond, should last forever".

**Richard Flux**

## Towers and Cables into Space

Years ago in the sixth form at St. Albans School, me and my mates worked out during a morning physics lesson that if you launched a cable of great enough length, stretching vertically from the equator, centrifugal force would make it self-supporting. It needed to be longer than the height of a 24-hour synchronous satellite, which then, in the nineteen-sixties, was pure theory. Some of us proposed that masses beyond the synchronous height might be used to pull satellites into orbit up the cable. However, by lunchtime, we laughed at the absurdity of the whole idea, for even if you could launch such a cable, launching satellites up it wouldn't work. When a satellite is pulled up the vertical cable, the satellite must be accelerated horizontally around the circumference of its increasingly higher orbit, to keep pace with the cable. But a vertical cable - cables are flexible - cannot supply the horizontal force necessary to accelerate a satellite sideways. As a satellite is towed upwards the cable loses its verticality and the cable drags. This effect is embodied in the law of conservation of angular momentum, resulting in the more mass you attempt to launch up the cable then the greater the drag. This results in a reduction in the amount of cable that can be self-supporting. In short, the more mass you attempt to launch up the cable, the more cable comes down and coils up around your feet on the ground.

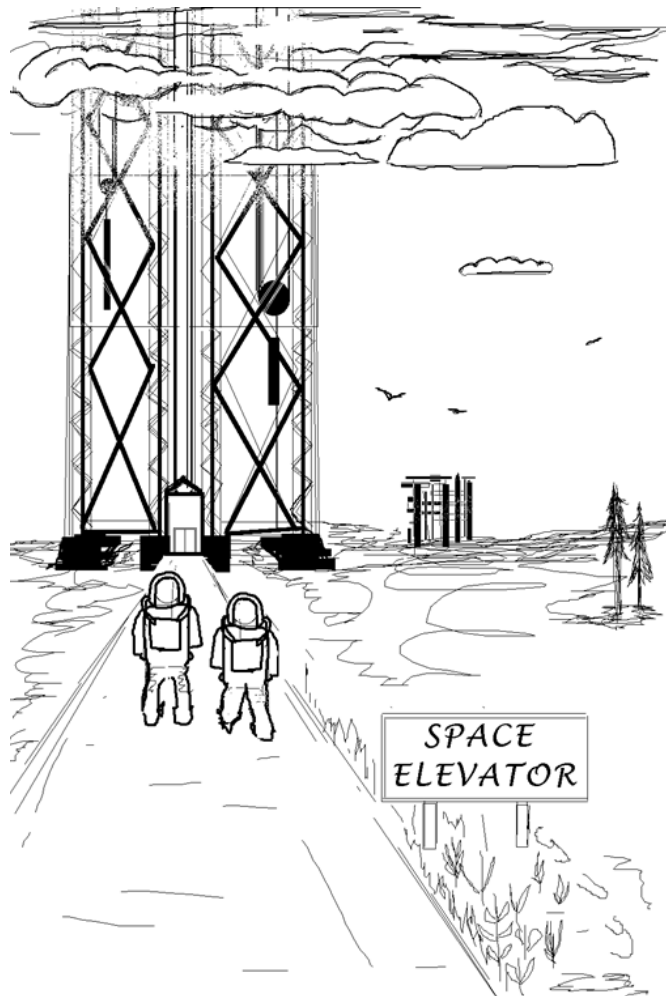
"Then how about a rigid cable - would that work?" suggested one of the group.

"A rigid tower? - looking at the formulae, you've got to build a tower 25,000 miles high, and beyond, to get enough centrifugal force to support the tower. To be rigid, the tower would need a base of a hundred miles or more, even then that's narrow compared to its height. Even our biggest self-supporting engineering structures, the Golden Gate Bridge, the Eiffel Tower, the Forth Bridge, are pipsqueak civil engineering blips compared to such a tower. That makes the project impossible on practical grounds - and a very good thing too!"

Another idea involving cables proposed that a space station dragging a conducting wire through the Earth's magnetic field, would experience induced currents that could be used as a "permanent source of power". However you would need a connection to the far end of the cable, but the equal voltage induced in the connection would oppose current flow in a loop made of two conductors. To overcome this problem, instead of making a connection, an electron gun would fire current into space to complete the circuit. Never mind how much power that would consume, a worse problem awaits.

Lenz's law says that when a current is induced in a conductor moving in a magnetic field, the conductor experiences a force that opposes the motion. This means that if you do obtain electrical power from the cable, it

slows the satellite towing it. The source of energy is not the cable somehow picking up energy from magnetic fields, the energy comes from the chemical energy that accelerated the satellite up to its working speed, so don't expect a satellite generating electrical power in this way to stay in orbit for long!



*"... and we can get a good nosh on floor 15031566."*

Sensible reasons for satellites towing strings in space can be traced back to the wish to gather data on a region of the atmosphere otherwise difficult to study - see "Satellite-on-a-string studies" *Flight International* 31 December 1977. More recently, in "Nasa probes free fuel" *The Times, Interface*, 29 July 1998, Anjana Ahuja reports on the possibility of getting electrical power from atmospheric plasma, which sounds a lot more sensible, and at last the possibility of the slowing of a satellite by a magnetic field is recognised - a space vehicle arriving at Jupiter could be slowed using the magnetic field of Jupiter rather than wasting valuable fuel. Of course, this makes me puzzle if it would need a large wire loop around the edge of a parachute, towed by the space vehicle, and whether this helps the parachute to stay open or the reverse - a nice puzzle to test your skills applying Fleming's rules (expressed differently in Greece). .....contd. over

Satellite on a string? - me and my mates thought back to the time when our adventurous elder brothers bought a military kite which took a lot of effort to launch. Having got it up, they were called in for tea, so to save bringing the kite down, they tied it to their back fence - a chain link fence including a considerable quantity of angle iron. After tea, they found the back fence had vanished - it had been dragged across a main road and a railway before falling into a gravel pit just short of Handley Page's aerodrome.

What if a tethered satellite drags its anchors?... now that's a slightly crazy question!

Other sources used in this discussion:

- "Satellite on a string carries hope for electricity in space" *The Times* 24 February 1996 by Nigel Hawkes.
- "Race for runaway satellite a non-starter" *The Times* 1 March 1996 by Nigel Hawkes.
- "Columbia loses its satellite-on-a-string as tether snaps" *The Times* 27 February 1996 by Anjana Ahuja.

### Approximate calculation

A mass  $m$  on the Earth's surface, has weight  $mg$  given by  $mg = GMm/R^2$  (1), where  $g$  is the acceleration due to gravity, Earth's radius  $R = 6000\text{km}$ ,  $M$  is Earth's mass,  $G$  is the gravitational constant. Now put the mass  $m$  into synchronous equatorial orbit, with period  $T = 24$  hours and radius  $r$ . Gravitational attraction = centripetal force gives  $GMm/r^2 = mv^2/r$  (2). Do some cancelling and use (1) to eliminate  $GM$  from (2), giving  $v^2 = gR^2/r$  (3) where  $v$  the orbital speed, is given by  $v = 2\pi r/T$  (4). Eliminate  $v$  between (3) and (4) gives  $r^3 = g(RT/2\pi)^2$ . Insert numerical values using  $g = 9.83 \text{ m.s}^{-2}$  (polar gravity - why not equatorial? - if you are aged 15 or less, tell the Editor your reason) and  $T$  in seconds,  $R$  in metres. Take the cube root and convert to kilometres, the answer comes to  $r = 40,600 \text{ km} = \text{approximately } 25000 \text{ miles}$ . Of course, this calculation is a lot easier than working out the volume of concrete used to extend the apron at the Observatory, because the shape of the ground, after volunteer diggers had been busy, could not be specified mathematically.

*Dr. Guy Moore*

### How does our observatory stay so clean and tidy?

Surprisingly perhaps, it's not down to a band of pixies! Trevor kindly gives his time to keeping the place "ship-shape" and also making sure we have stocks of tea, coffee, sugar, milk and biscuits.

*Thanks Trev...*

## Large Synoptic Survey Telescope



The Large Synoptic Survey Telescope (LSST) is a proposed ground-based 8.4-meter, 10 square-degree-field telescope that will provide digital imaging of faint astronomical objects across the entire sky, night after night. In a relentless campaign of 15 second exposures, LSST will cover the available sky every three nights, opening a movie-like window on objects that change or move on rapid timescales: exploding supernovae, potentially hazardous near-Earth asteroids, and distant Kuiper Belt Objects. The superb images from the LSST will also be used to trace billions of remote galaxies and measure the distortions in their shapes produced by lumps of Dark Matter, providing multiple tests of the mysterious Dark Energy. Link: [http://www.lsst.org/lsst\\_home.shtml](http://www.lsst.org/lsst_home.shtml)

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## Mars Exploration Rover - Press Release



*Spirit's West Valley Panorama (False Colour) - Image credit: NASA/JPL-Caltech/Cornell University*

**NASA'S Mars Exploration Rover Spirit captured this westward view from atop a low plateau where Spirit spent the closing months of 2007.**

After several months near the base of the plateau called “Home Plate” in the inner basin of the Columbia Hills range inside Gusev Crater, Spirit climbed onto the eastern edge of the plateau during the rover's 1,306th Martian day, or sol, (Sept. 5, 2007). It examined rocks and soils at several locations on the southern half of Home Plate during September and October. It was perched near the western edge of Home Plate when it used its panoramic camera (Pancam) to take the images used in this view on sols 1,366 through 1,369 (Nov. 6 through Nov. 9, 2007). With its daily solar-energy supply shrinking as Martian summer turned to fall, Spirit then drove to the northern edge of Home Plate for a favourable winter haven. The rover reached that northward-tilting site in December, in time for the fourth Earth-year anniversary of its landing on Mars. Spirit reached Mars on Jan. 4, 2004, Universal Time (Jan. 3, 2004, Pacific Standard Time). It landed at a site at about the centre of the horizon in this image.

This panorama covers a scene spanning left to right from southwest to northeast. The western edge of Home Plate is in the foreground, generally lighter in tone than the more distant parts of the scene. A rock-dotted hill in the middle distance across the left third of the image is “Tsiolkovski Ridge,” about 30 meters or 100 feet from the edge of Home Plate and about that same distance across. A bump on the horizon above the left edge of Tsiolkovski Ridge is “Grissom Hill,” about 8 kilometres or 5 miles away. At right, the highest point of the horizon is “Husband Hill,” to the north and about 800 meters or half a mile away.

This view combines separate images taken through Pancam filters centred on wavelengths of 753 nanometres, 535 nanometres and 432 nanometres. It is presented in a false-colour stretch to bring out subtle colour differences in the scene.



*Spirit's West Valley Panorama (Uncoloured) - Image credit: NASA/JPL-Caltech/Cornell University*

If you have web access, further pictures are available at <http://marsrovers.nasa.gov/gallery/press/spirit/20080103a.html>

## THE BACK PAGE

LINKS, COMMENTS AND OBSERVATIONS

### Web Links

VAS and its officers are not responsible for the content of the web sites linked here. It is **your** responsibility to ensure you are protected against viruses and malware.

**British National Space Centre** - <http://www.bnsc.gov.uk/>

**Britain in Space** - <http://www.spaceuk.org/index.htm>

**Federation of Astronomical Societies** - <http://www.fedastro.org.uk/>

**British Commercial Spaceflight** - <http://www.rocketeers.co.uk/>

**British Astronomical Association** - <http://www.britastro.org/>

### Royal Astronomical Society Shows Awards on Star Astronomers and Geophysicists

Monday, January 14, 2008

The Royal Astronomical Society has announced its list of recipients of the society's awards for 2008. The awards serve to honour individuals and groups who have made a distinguished contribution to astronomy and geophysics.

Gold medals go to Professor Joseph Silk FRS of the Nuclear and Astrophysics Laboratory at the University of Oxford, and Professor Brian Kennett FRS of the Research School of Earth Sciences at the Australian National University.

Professor Silk's award recognises 40 years of achievements in cosmology while Professor Kennett receives his award in commendation of his work in seismology.

Full awards list at:

[http://www.ras.org.uk/index.php?option=com\\_content&task=view&id=1384&Itemid=2](http://www.ras.org.uk/index.php?option=com_content&task=view&id=1384&Itemid=2)

### SOFIA to Open Door on New Era of Astronomy

On Monday, what NASA calls the "world's largest airborne observatory" flew into the Bay Area and caught the eye of Peninsula residents - some of whom wondered if perhaps the president were on board. He wasn't - but a 44,100-pound telescope was, and officials at the NASA/Ames Research Center in Mountain View enthusiastically showed off the massive aircraft they hope will one day help them discover the origin of life.

Called the Stratospheric Observatory for Infrared Astronomy - or SOFIA for short - the former PanAm commercial airliner has been fully renovated, refurbished and rigged with a reflecting telescope similar to the Hubble Space Telescope.

Early next year, the modified Boeing 747SP is expected to take off from an airfield in Palmdale just northeast of Los Angeles and travel to an altitude of more than 45,000 feet - thousands of feet above the typical airliner - at speeds of over 600 mph, ushering in a new era of astronomy."It can do science no other NASA observatory can do," said Tom Roellig, an astrophysicist and the SOFIA project scientist. "It's almost as good as going into space."

SOFIA is housed in Southern California, but its science and mission project office is based at NASA/Ames.

*Julie Sevrens Lyons - Mercury News - 15/01/2008 01:33:19 AM PST*

### For Sale



#### SolarMax 40 Telescope

Aperture:	40mm
Focal Length:	400mm
F/Ratio:	F/10
Bandwidth:	<0.7Å
Thermal Stab:	0.005 Å/°C
Safety Block:	>10-5 from EUV/IR

This solar telescope is less than 6 months old and cost £1295 when purchased from Telescope House. Selling as I have just bought a 12" Meade and must offset some of the cost.

**A bargain at £800**

**Contact Tony Plucknett  
Tel 527959**

### Remember "The Life of Brian"?

Monty Python's film included a nice little ditty called "Galaxy Song" and I was reminded of it the other day. You can listen to it at: [http://www.gecdsb.on.ca/d&g/astro/music/Galaxy\\_Song.html](http://www.gecdsb.on.ca/d&g/astro/music/Galaxy_Song.html).

As is usual with these things, it may make you feel rather small!

### Articles Needed

New Zenith welcomes letters, articles or pictures related to all aspects of astronomy. Please send contributions to the Editor at the email or postal address on the front page.

*..that's all folks!*